ORDER

6600.29

RADIO FREQUENCY INTERFERENCE (RFI) PROJECT IMPLEMENTION PLAN

February 25, 1994

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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Initiated By: ANC-300

RECORD OF CHANGES

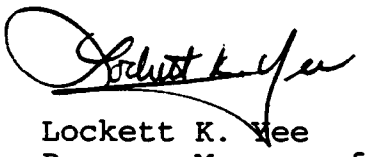
DIRECTIVE NO. **6600.29**

CHANGE TO BASIC	SUPPLEMENT			OPTIONAL	CHANGE TO BASIC	SUPPLEMENTS			OPTIONAL

FOREWORD

This order provides technical guidance and management direction for the orderly implementation and acceptance of the Radio Frequency Interference (RFI) Elimination Program.

This order also provides a list of applicable documents for users in the development, preparation, tracking, and maintenance for the RFI Elimination Program equipment. It also contains schedules, milestones, and a funding profile for the RFI Elimination Program.



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Program Manager for Air/Ground Communications and Control

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CHAPTER 1. GENERAL

1. **PURPOSE**. This order provides technical guidance and management direction for the orderly implementation of the Radio Frequency Interference (RFI) Elimination Program. This program, Capital Investment Plan (CIP) Project 44-03, includes procurements of Linear Power Amplifiers (LPA), receiver multicouplers, transmitter combiners, notch filters, cavity filters, and crystal filters. The latter three will be procured later in the program. These procurements will provide equipment for use in the reduction of RFI. The procedures and responsibilities in this order were developed using current agency directives. This order establishes program management and project implementation procedures and describes responsibilities governing the activities of organizations. Management responsibility for this program has been assigned to the Air/Ground Communications and Control Program, ANC-300. Air/Ground Communications and Spectrum Engineering Division (ASM-500) have worked together in developing the technical requirements for all RFI elimination equipment procurements. This document also identifies and describes specific events and activities to be accomplished in order to implement the RFI elimination program. This order is divided into sections with Section I addressing the receiver multicoupler and the linear power amplifier and Section II addressing the transmitter combiner.

2. **DISTRIBUTION**. This order is distributed to division level in Contracting and Quality Assurance, Systems Management Service, NAS Transition and Implementation Service, NAS Systems Engineering Service, Air Traffic Plans and Requirements, and the Office of Training and Higher Education in FAA Washington Headquarters; to branch level in the regional Airway Facilities and Air Traffic divisions; to branch level in the FAA Academy and FAA Logistics Center at the Mike Monroney Aeronautical Center; to branch level in the Engineering, Test and Evaluation Service at the FAA Technical Center; and a standard distribution to all Airway Facilities (AF) sectors, sector field offices, sector field units and sector field office units and Air Traffic field offices.

3. **ACRONYMS AND ABBREVIATIONS**. The following abbreviations, and acronyms are used in this order:

AF	Airway Facilities
A/G	Air/Ground
ARTCC	Air Route Traffic Control Center
CAI	Contractor Acceptance Inspection
CIT	Contractor Integration Testing
COTS	Commercial-off-the-shelf
DRR	Deployment Readiness Review
FAA	Federal Aviation Administration
FAALC	FAA Logistics Center

FAC	Facility
ILSP	Integrated Logistics Support Plan
LPA	Linear Power Amplifier
LSA	Logistics Support Analysis
LSAR	LSA Record
LRU	Line Replaceable Unit
NAS	National Airspace System
OCD	Operational Capabilities Demonstration
OT&E	Operational Test and Evaluation
PIP	Project Implementation Plan
RFI	Radio Frequency Interference
SMO	Spectrum Management Officer
VA	Volt Ampere

4. **AUTHORITY TO CHANGE THIS ORDER**. The Program Manager for Air/Ground Communications and Control, ANC-300, may issue changes to this order necessary to manage and implement the project which do not affect policy, delegate authority, or assign responsibility.

5.-19. **RESERVED**.

CHAPTER 2. PROJECT OVERVIEW

20. **SYNOPSIS**. RFI elimination LPA and receiver multicoupler equipment will be utilized to support the RFI Elimination Program requirements for various sites. The program will enhance operational capabilities on existing air/ground (A/G) equipment. The equipment procured will help reduce the effects of RFI in FAA A/G communications. The primary operating voltage will be 120 VAC with the ability for 24 VDC operation in the event of a loss of AC power.

21. **PURPOSE**. The RFI Elimination Program procurements provide for LPA's, receiver multicouplers, and ancillary devices to support, establish, relocate, and modernize CIP projects. The procurements will be for commercial off-the-shelf (COTS) equipment configured to fit into existing installations. The equipment will improve A/G communications through the reduction of RFI.

22. **HISTORY**. The RFI Elimination Program commenced in 1990. The objective of this program is to procure equipment that will reduce RFI and replace existing spectrally noisy communication equipment with solid state units having more stringent specifications for RFI reduction.

23. **ACQUISITION STRATEGY**. Key aspects in the acquisition of the RFI Elimination equipment are as follows:

a. The FAA plans to utilize an Indefinite Delivery Indefinite Quantity (IDIQ) Firm-Fixed Price (FFP) contract to procure COTS LPA's and receiver multicouplers. In order to provide flexibility in meeting new CIP requirements through the 1990's, the contracts for the LPA and receiver multicoupler equipment will be issued for five (5) years for hardware and include provisions for a contractor repair service.

b. The RFI Elimination LPA and receiver multicoupler equipment procurements consist of COTS equipment which will be functionally compatible with the equipment presently installed.

c. The equipment and services to be obtained will be ordered as needed and include:

(1) Equipment.

(a) VHF and UHF LPA's.

(b) VHF and UHF receiver multicouplers.

(c) Mating connectors.

(d) Crystal filters.

(e) Notch filters.

(f) Cavity filters.

(2) Maintenance Support for LPA and Multicoupler.

(a) Depot level repair at contractor facility for line replaceable units (LRU).

(b) Technical assistance.

(c) Procurement of spare parts.

(d) Reprocurement Data Package (for items no longer supported by the contractor)

(3) Training for LPA and Receiver Multicoupler.

(a) Correspondence Study Course (training materials only).

(b) Hardware Maintenance OJT Course (training materials only).

(c) Depot Level Maintenance Course (materials and classroom training).

(4) Technical Support. Contractor provided technical engineering and hardware support services for the LPA and multicouplers.

24.-29. **RESERVED**.

CHAPTER 3. PROJECT DESCRIPTION

30. **FUNCTIONAL DESCRIPTION**. The receiver multicouplers will be used to reduce RFI resulting from multiple collocated antennas. The LPAs will be used to replace spectrally noisy equipment. The RFI elimination equipment will be state-of-the-art radio communication devices with more stringent requirements that will reduce spurious emissions. The equipment will operate in one of two frequency ranges, either 118-137 MHz Very High Frequency (VHF) or 225-400 MHz Ultra High Frequency (UHF).

31. **PHYSICAL DESCRIPTION**.

a. RFI Elimination Equipment. The purchase description of the equipment will be updated and furnished after contract award.

b. Equipment Racks. Existing equipment racks will be utilized for the LPA's and receiver multicouplers. Existing racks provide standard Electronics Industry Association 19 inch mounting width.

32. **SYSTEM REQUIREMENTS**. The system requirements are described in paragraphs a - c.

a. Electrical Power. The LPAs and receiver multicouplers will operate on AC or DC power. The electrical power requirements for the RFI elimination equipment are as follows:

(1) AC Power. The LPA requires a maximum of 600 volt amperes (VA) @ 120 VAC of power from the essential buss. The receiver multicoupler requires a maximum of 400 VA @ 120 VAC from the essential buss.

(2) DC Power. The LPA requires a maximum of 10 amperes @ 24 VDC. The receiver multicoupler requires a maximum of 6.0 amperes @ 24 VDC.

b. Space. The space requirements for the RFI elimination equipment are dependent upon the limits established in the purchase descriptions and the actual equipment dimensions. Estimated dimensions for each kind of equipment are as follows:

(1) The LPA: 7 inches or less in height, 19 inches in width, and less than 19 inches in depth.

(2) The receiver multicoupler: 5.25 inches or less in height, 19 inches in width, and less than 18 inches in depth.

c. Environmental.

(1) Ambient Temperature Operation. The LPA and receiver multicoupler equipment will operate in an ambient temperature range between -10° C (Celsius) and +50° C.

(2) Relative Humidity Operation.

(a) Attended Facilities. The humidity will be maintained between 10 and 80 percent in accordance with FAA specifications.

(b) Unattended Facilities. The humidity will be maintained between 5 and 90 percent in accordance with FAA specifications.

33. **INTERFACES**.

a. Interface impedance. Equipment will be compatible with the following 50 ohm impedance interface:

RFI Elimination Equipment	Interfaces
(1) LPA	Transmitter, combiner, antenna
(2) Multicoupler	Receiver, antenna

b. NAS-IR-81004304 (Interface Requirements Document ARTCC/ACF/DMN) is the only applicable interface document.

34.-39. **RESERVED**.

CHAPTER 4. PROJECT SCHEDULE AND STATUS

40. **PROJECT SCHEDULES AND GENERAL STATUS**. The project schedule for the procurement process has been established.

41. **MILESTONE SCHEDULE SUMMARY**. The milestones for the projects are presented below.

	DATES	
MILESTONE	LPA	MULTICOUPLER
Procurement Request to ASU	02/23/93	02/12/93
Solicitation Issued	12/15/93	10/08/93
Proposals Received	02/07/94	11/22/93
Technical Proposal Eval Comp.	05/22/94	01/13/94
Cost Proposal Eval Comp.	05/22/94	01/13/94
Best and Final Offers Received	06/22/94	02/14/94
Operational Capabilities Demonstration (OCD) Completed	06/09/94	03/14/94
Contract Award	06/13/94	04/26/94
OT&E Testing Completed	08/06/94	07/14/94
Deployment Readiness Review (EXCOM)	03/12/95	12/21/94

42. **INTERDEPENDENCIES AND SEQUENCE**. As this project is primarily a replacement of existing equipment, there are no interdependencies with other contracts or events.

43.-49. **RESERVED**.

CHAPTER 5. PROJECT MANAGEMENT

50. **PROJECT MANAGEMENT, GENERAL.** The project management organizations at the FAA Washington headquarters and regions that will be responsible for the successful implementation of the RFI Elimination Program are presented in subparagraphs a - d.

a. FAA Washington Headquarters Program Management.

(1) Program Manager for Air/Ground Communications and Control (ANC-300). ANC-300 is responsible for the program management of the RFI Elimination Program.

(2) Associate Program Manager for Engineering (APME) (ANC-700). A member of the Air/Ground Communications and Control Division (ANC-700) is designated the APME for the RFI Elimination Program. The APME is responsible for acquisition and implementation of the RFI elimination equipment. The implementation responsibilities of the APME are to ensure that the RFI elimination equipment is ready for integration into the National Airspace System (NAS), and that the FAA will be ready to receive, operate, and provide life-cycle support to the RFI elimination equipment when deployed.

(3) Contracting Officer (ASU-300). The Contracting Officer will convert the program requirements into contractual documents and perform contract management activities concerned with assuring that the terms of the contract are met. The Contracting Officer is the only person authorized to make changes effecting prices, deliverables or schedules.

(4) Associate Program Manager for Logistics (APML) (ANS-420). The APML is responsible for ensuring that all National Airspace Integrated Logistics Support (NAILS) requirements are addressed in each procurement.

(5) Maintenance Operations Division (ASM-200). A member of the Maintenance Operations Division is responsible for developing and recommending long-range maintenance and training requirements for the RFI Elimination equipment.

(6) Spectrum Engineering and Policy Division, (ASM-500). A member of the Spectrum Engineering and Policy Division is designated as the contact to ensure that the facility operates with a minimum of interference after the equipment is deployed.

(7) The Project Support Contractor. Responsibilities of the project support contractor are to:

(a) Provide technical support to the APME.

(b) Maintain an implementation milestone schedule.

(c) Support the technical evaluations team.

(d) Provide independent cost estimates.

(e) Communicate program information and status.

(8) Associate Program Manager for Quality (APMQ) The APMQ is responsible for administering the contract at the Contractor's facilities and ensuring the adequacy of the quality control program and inspection systems.

b. Regional Project Management. The regions have each designated a Regional Associate Program Manager (RAPM) who is responsible for the coordination and planning of scheduled RFI elimination activities within their region. Responsibilities of the RAPM are to:

(1) Interface with the ANC-700 APME on all implementation activities including the following major items:

(a) Implementation planning.

(b) Project funding.

(c) Scheduling.

(d) Testing.

(2) Interface with the APML on all implementation activities including the following major items:

(a) Integrated logistics support.

(b) Maintenance.

(c) Training.

(3) Coordinate with the regional divisions and facilities in matters pertaining to the RFI Elimination Program and be the focal point for:

(a) Site configuration management.

(b) Site preparation support.

(c) Site survey support.

(d) RFI elimination equipment installation support by F&E or TSSC personnel.

(e) Site acceptance testing support.

(f) Updating Configuration Management database.

(g) Updating regional documents.

(4) Interface with the AF sectors on all RFI elimination implementation and installation activities including the following major items:

(a) Hardware delivery.

(b) Installation of equipment by F&E or TSSC personnel.

(c) Integration and testing.

(d) System shakedown.

(e) Operational Readiness Demonstration.

(f) Equipment relocation/disposal.

(5) Provide implementation direction to technical on-site representatives

c. Facility Project Management. An AF sector representative will be assigned by the Sector Manager and will have site responsibility for the management of the equipment installation. The AF sector representative is responsible for coordination with the AF director for the proper installation, integration, and acceptance testing at the site. The AF sector representative will attend contractor training courses to the extent possible. The duties of the AF sector representative are to:

(1) Ensure that site preparation activities are complete and acceptable prior to RFI elimination equipment delivery.

(2) Assist with site surveys.

(3) Coordinate and schedule site personnel necessary to support or monitor the installation of RFI elimination equipment and obtain site concurrence.

(4) Report any problems encountered during the installation and resolve those problems with the help of the regional Spectrum Management Officer (SMO) and the ANC-700 APME as required.

(5) Ensure that all RFI elimination hardware has been properly installed.

(6) Ensure that all required installation, integration, and acceptance testing has been completed satisfactorily.

(7) Sign-off on the delivery and successful site installation of the RFI elimination equipment as proven by reduced interference operation of the site.

(8) Provide the site manager with periodic status and progress reports on the installation and checkout of the RFI elimination equipment.

(9) Develop and maintain site specific implementation schedules by coordinating with the site manager.

(10) Coordinate acceptance testing of the RFI elimination equipment/installation at the site with the regional SMO and the AF sector, the ARTCC, the contractor and Air Traffic to ensure reduced interference.

(11) Coordinate future frequency change implementation at the site with ASM-500, through the regional SMO, to ensure that when frequency changes are made all RFI elimination equipment is tuned to reduce RFI on all frequencies in use by the facility.

d. Regional Spectrum Management. Regional Spectrum Management Officers (SMO) are designated as the RFI contacts to ensure that the facility operates with reduced interference after the equipment is deployed. The SMO also is responsible for investigation and resolution of scheduled and unscheduled RFI in the NAS. The SMO responsibilities include:

(1) Site interference analysis.

(2) Future frequency changes or the addition of new frequencies at the facility.

(3) Future frequency changes or the addition of new frequencies at the facility.

(4) Coordinate future frequency change implementation at the site with the RAPM to ensure that when frequency changes are made all RFI elimination equipment is tuned to reduce RFI on all frequencies in use by the facility.

51. **PROJECT CONTACTS**. The project management personnel designated as contacts for their respective organizations in Washington headquarters are listed below.

Name	Organization/Title	Commercial Number
Lockett Yee	ANC-300/Program Mgr.	(202) 287-7179
Nate Johnson	ANC-700/Division Mgr.	(202) 287-7151
Arnold Meyers	ANC-700/APME	(202) 287-7156
Vida Tarpley-Lee	ASU/Contracting Spec.	(202) 267-7699
Anthony Cerino	ACW-300/APMT	(609) 485-5640

Mike Goldstein	ANS-420/APML	(202) 267-7320
Oscar Alvarez	ASM-510/Branch Mgr.	(202) 267-7531
Charles Gage	AOS-200/Division Mgr.	(405) 680-3647
David Flynn	ISN/DM	(202) 479-0085
Dennis Crown	ISN/RFI Task Manager	(202) 479-0085

The following project management representatives will be identified at a later date:

ASU-420/FAA Industrial Division-APMQ
AML-1/FAA Logistics Center
AMA-400/FAA Academy
AAL-421/RAPM
ACE-420/RAPM
AEA-420/RAPM
AGL-432/RAPM
ANE-420/RAPM
ANM-450/RAPM
ASO-423/RAPM
ASW-420/RAPM
AWP-450/RAPM
AAL-483/SMO
ACE-461/SMO
AEA-483/SMO
AGL-483/SMO
ANE-483/SMO
ANM-464/SMO
ASO-483/SMO
ASW-483/SMO
AWP-483/SMO

52. **PROJECT COORDINATION**. In addition to the project management organization described in Paragraph 50, the coordination and active support of a number of other FAA organizations will be of great importance to the successful implementation of the RFI Elimination Program.

a. FAA Washington Headquarters. Listed are the headquarters organizations supporting the implementation of the RFI Elimination Program.

ASE-100	NAS System Engineering Service, Automation System Engineering Division
ASE-200	NAS System Engineering Service, Communications System Engineering Division
ASU-100	Management, Plans & Evaluation Division
ASU-400	Industrial Division
ASM-120	Systems Management Service, Technical Standards Branch

ASM-200 Systems Management Service, Maintenance Operations Division

AHT-400 Office of Training and Higher Education, Airway Facilities Training Program Division

ATQ-1 Office of Independent Operational Test and Evaluation Oversight

b. FAA Technical Center. ACW-300 will serve as the lead for FAA Operational Test and Evaluation (OT&E) integration testing and the development of a Test and Evaluation Master Plan (TEMP). Responsibilities are to:

(1) Develop the FAA integration test plan and assist in conducting integration testing.

(2) Provide technical support to ANC-700 throughout the RFI elimination implementation program.

(3) Monitor contractor factory and site acceptance testing.

(4) Support AOS-200 in shakedown testing.

(5) Develop the equipment TEMP in coordination with ANC-700, and AOS-200.

(6) Coordinate testing with the contractor, AOS-200, and ANC-700.

c. Mike Monroney Aeronautical Center. The FAALC, FAA Academy, and Operational Support Service (National Engineering Field Support Division) will support the RFI elimination implementation. Responsibilities are to:

(1) FAALC (AML-1).

(a) Provide logistics support service, planning, cataloging and provisioning for the RFI elimination equipment.

(b) Conduct a provisioning conference.

(c) Participate in the development of logistics policies and plans for support of the RFI elimination equipment.

(d) Plan activities for the transition of the RFI elimination equipment into the logistics inventory.

(e) Provide equipment exchange and coordinate repair support for the RFI elimination equipment after deployment.

(2) FAA Academy (AMA-400).

(a) Monitor contractor development of the RFI elimination equipment training program.

(b) Monitor training conducted by the contractor.

(c) Develop FAA training programs for the operation and maintenance of RFI elimination equipment.

(3) National Airway Systems Engineering Division, Operational Support Service, AOS-200.

(a) Develop the shakedown test plan and conduct shakedown testing of RFI elimination equipment.

(b) Provide second level engineering support of RFI elimination equipment restoration.

(c) Maintain the configuration control of the equipment through the technical instruction book when approved and distributed. The technical instruction book provides the configuration baseline of the system.

53. **PROJECT RESPONSIBILITY MATRIX**. Figure 5-1, Project Responsibility Matrix, shows the organizational responsibilities and significant actions to be performed during the RFI elimination program implementation.

FIGURE 5-1
PROJECT RESPONSIBILITY MATRIX

Activity	Action	ANC-700	AOS-200 *	ASM-500	ACW-300	ANS-420	AML-1	AMA-900	RAPM	Contractor.
Equipment	Provide Receive Install						X		X X	X
Integration Testing	Plan Conduct	X		X	X X					
Shakedown Testing	Plan Conduct	X	X X	X						
Provisioning Technical Documentation	Provide Review Receive Distrib.	X				X X X	X X X			X
Configuration Management	Plan Conduct	X X	X X							X X
Logistics Support	Plan Conduct	X				X X	X X			
Training	Plan Conduct	X				X		X X		X
Maintenance	Site Depot								X	X
Facility/System Acceptance	Plan Conduct			X X					X X	

ANC-700 = Air/Ground Communications and Control
AOS-200 = National Airway Systems Engineering Division, Operational Support Service
ASM-500 = Spectrum Engineering and Policy Division
ACW-300 = Engineering, Integration and Operational Evaluation Service
ANS-420 = NAS Transition and Implementation Service
AML-1 = FAA Logistics Center
AMA-900 = FAA Academy
RAPM = Regional Associate Program Manager
CONTRACTOR = Contract award winner

* See Paragraph 52

54. **PROJECT MANAGERIAL COMMUNICATIONS**. The RFI Elimination Program Office will manage the projects using the established communications channels (written and oral) between the RFI Elimination Project Manager and the contracting officer and between the contracting officer and the contractor.

55. **IMPLEMENTATION STAFFING**. Systems Management Service, Maintenance Operations Division, Workforce Standards and Analysis Branch (ASM-260) is responsible for providing staffing standards, however, there are no unique or peculiar staffing requirements associated with the RFI Elimination Program. Organizations with assigned responsibilities are expected to accomplish their tasks with existing resources.

56. **PLANS AND REPORTS**. The following documents are required during the acquisition, testing, and implementation of the RFI elimination equipment.

a. Documentation Delivered With Offeror's Proposal. The individual offerors will submit the following documents with their proposal as they apply:

(1) Program Management Plan.

(2) Configuration Management Plan.

(3) Quality Control Program Plan.

(4) Contractor's Test Documentation.

(5) Contractor Repair Service Plan.

(6) Commercial manuals.

(7) Training Materials Report.

(8) Integrated Support Plan.

(9) LSA Plan.

b. Contractor Documentation Delivered After Contract Award. The RFI elimination equipment contractors may be required to submit the following Contract Data Requirements List items in accordance with the final negotiated schedule and distribution:

(1) Agendas.

(2) Minutes.

(3) Configuration Status Accounting Reports.

(4) Monthly Financial Status Progress Reports.

(5) Logistics Support Analysis Plan updates.

(6) Repair Level Analysis Report.

(7) Reliability allocation figures.

(8) Post Production Support Plan.

(9) Contractor repair service test procedures.

(10) Quarterly Repair Status Reports.

(11) Annual repair reports.

(12) Reprocurement data package.

(13) LSA Parts Master File and Incremental Delivery.

(14) Supplementary provisioning technical data.

(15) Task analysis reports.

(16) Training development plans.

(17) Course design guides.

(18) Student achievement tests.

(19) Student course materials.

(20) Instructor course materials.

c. Commercial Manuals/Technical Instruction Books. Each item of hardware delivered under the contracts will have included an approved commercial manual or technical instruction book in accordance with the contract.

d. FAA Implementation Plans and Reports. The RFI elimination implementation activities will be documented in the plans and reports described below:

FAA Documentation	Lead
Test & Evaluation Master Plan	ACW-300/ANC-700
Integrated Logistics Support Plan	ANS-420
Deployment Readiness Review Report	AAF-11/ANC-700
Integration and Test Plan	ACW-300
Shakedown Test Plan	AOS-200

57. **APPLICABLE DOCUMENTS**. The following documents have been referenced and the current version of these documents are applicable to the implementation of the RFI Elimination Program:

DOCUMENT	TITLE
FAA-PD-130-PA	Purchase Description, VHF/UHF Air/Ground Linear Power Amplifier
FAA-PD-130-MC	Purchase Description, VHF/UHF Receiver Multicouplers
FAA-D-2494	Technical Instruction Book Manuscript: Electronic, Electrical, and Mechanical Equipment, Requirements for Preparation of Manuscript and Production of Books
FAA-STD-013	Quality Control Program Requirements
FAA-STD-021	Configuration Management (Contractor Requirements)
FAA-STD-024	Preparation of Test and Evaluation Plans and Test Procedures
FAA-STD-036	Preparation of Project Implementation Plans
FAAD-STD-1323	Repair and Testing Requirements for FAA Ground Electronic Equipment
Order 1320.1	FAA Directives System
Order 1100.57	National Engineering Field Support Division, Maintenance Program Procedures
Order 1800.63	NAS Program Development Readiness Review
Order 1800.58	NAILS Policy
Order 1800.8	National Airspace System Configuration Management
Order 1810.4	FAA NAS Test and Evaluation Policy
Order 4800.2	Utilization and Disposal of Excess and Surplus Personal Property
Order 6000.30	Policy for Maintenance of the National Airspace System through Year 2000
Order 6030.45	Facility Reference Data File

Order 6050.22	Radio Frequency Interference Investigation and Reporting
Order 6050.32	Manual of Regulations and Procedures for FAA Spectrum Management
MIL-STD-1388-1A	Logistic Support Analysis
MIL-STD-1388-2B	DOD Requirements for a Logistics Support Analysis Record

58.-59. **RESERVED**.

CHAPTER 6. PROJECT FUNDING

60. **PROJECT FUNDING STATUS, GENERAL.** The chart below illustrates the current CIP funding for RFI elimination, as approved by the House subcommittee. This includes limited funding for installation. The RFI totals reflect an independent Government cost estimate of the requirements.

($ Million)	PRIOR	92	93	94	95	96	97	98	TOTAL
House Subcomm.	$9.6	3.0	0.0	2.0	0.0	0.0	0.0	0.0	14.6
RFI Totals	$9.6	3.0	0.0	2.0	0.0	12.1	9.0	9.0	44.7

61.-69. **RESERVED.**

CHAPTER 7. DEPLOYMENT

70. **GENERAL DEPLOYMENT ASPECTS**. The Associate Administrator for Airway Facilities, AAF-1, is responsible for the RFI elimination equipment deployment determination. The deployment determination will be based on an FAA assessment of the extent to which the RFI Elimination equipment is ready to be successfully integrated into the NAS and the extent to which the FAA infrastructure is prepared to accept, operate, and support the deployed equipment throughout its life cycle. The requirements for this assessment are established in Order 1800.63, NAS Program Deployment Readiness Review (DRR) Process. The general aspects and schedule for the RFI Elimination Program DRR process are as follows:

a. Order 1800.63 outlines the general DRR process by which the RFI elimination ANC-700 APME will conduct an FAA review, ensuring that the RFI elimination equipment is ready to be integrated into the NAS and that the FAA is ready to operate and provide life cycle support to the RFI Elimination equipment when deployed. Two key DRR milestones are:

(1) Initiation of the DRR Process. The APME will initiate an internal review of the DRR status upon release of the solicitation. The APME and the DRR Program Manager (AAF-11) will convene the DRR team in accordance with Order 1800.63. Participants for this team are described in the order.

(2) Submission of the DRR Report and Briefing. After completion of shakedown testing, AOS-200 will submit a report to AAF-1 and the DRR with a recommendation on deployment. ANC-700 APME will receive a copy of the report and submit a DRR report to the Deputy Associate Administrator for Airway Facilities (AAF-2).

b. The DRR team will identify issues/concerns requiring action prior to equipment deployment. All open actions will be addressed in the DRR Report to AAF-2. A detailed DRR checklist, as defined in Order 1800.63, will be used by the DRR team to ensure that all significant areas of concern are identified during the review. The checklist will address:

(1) NAS and subsystem requirements.

(2) Contract status.

(3) Project implementation.

(4) Facility/site preparedness.

(5) Telecommunications requirements.

(6) NAILS Support.

(7) Training/certification.

(8) Software (firmware) support.

(9) Staffing.

(10) Quality assurance.

(11) Configuration management.

(12) Test program.

(13) Security.

(14) Other coordination.

(15) Human factors.

c. The Deputy Associate Administrator for Airway Facilities, AAF-2, will chair the DRR Executive Committee Meeting, which will propose an RFI Elimination equipment deployment determination to be recommended to the Associate Administrator for Airway Facilities (AAF-1) for approval. The process and participants for this meeting are described in Order 1800.63.

d. The DRR schedule is as follows:

	DATE	
DRR ACTIVITY	LPA	MULTICOUPLER
DRR Kickoff Meeting	09/09/93	03/08/93
Initial Checklist Review	09/09/93	03/12/93
DRR Team Meeting	11/17/93	11/17/93
Baseline Checklist	12/15/93	12/15/93
Perform Team Review	06/15/94	02/15/94
Director Review	07/30/94	06/20/94
OT&E Testing Complete	08/06/94	07/14/94
Close out Deployment Critical Issues	10/10/94	09/05/94
Distribute Draft DRR Report	01/13/95	10/05/94
DRR Briefing to AAF-1	02/13/95	11/05/94
DRR Report Approved	03/10/95	11/18/94
Deployment Determination	03/12/95	12/21/94

71. **SITE PREPARATION**. The site preparation will be the responsibility of the regional Airway Facilities division coordinated through the RAPM. Limited funding may be available from Facilities and Engineering (F&E) sources. There is no plan to purchase additional real estate to incorporate RFI elimination equipment.

72. **DELIVERY**. The RFI elimination equipment will be delivered in response to separate delivery orders issued by the FAA contracting officer. These orders will be issued for equipment

to fill requirements assigned by ANC-300. The RFI elimination equipment vendors are required to deliver equipment within 60 days of receipt of delivery order. Delivery orders may be written for equipment, maintenance, training, and other support services. Site installation is not part of the contract. Airway Facilities F&E or Technical Services Support Contractor (TSSC) personnel will provide all site installation.

73.-79. **RESERVED**.

CHAPTER 8. VERIFICATION

80. **REQUIREMENTS VERIFICATION**. The RFI elimination equipment vendors are required to meet the requirements of the contract by submittal of their test documentation. The vendor will submit a matrix illustrating cross matching of information between their proposed equipment and the requirements of the contract. An Operational Capabilities Demonstration is also planned prior to contract award to assure the requirements are met.

81. **OPERATIONAL TEST AND EVALUATION**. All representative RFI elimination equipment must pass OT&E testing prior to the first years delivery of equipment.

a. FAA OT&E INTEGRATION TESTING. FAA OT&E Integration Testing will take place at the FAA Technical Center.

b. FAA OT&E SHAKEDOWN TESTING. FAA OT&E Shakedown Testing will take place at the first operational site.

82. **CONTRACTOR ACCEPTANCE INSPECTION**. A Contractor Acceptance Inspection (CAI) will be performed by the Quality Reliability Officer (QRO) at the contractor's facility on the equipment to be delivered under each contract.

83. **ACCEPTANCE INSPECTION**. An acceptance inspection will be performed by the regional AF and spectrum engineering representatives for all new installations. The inspection will determine that the installation at the site is completed in accordance with standards and specifications. FAA Forms 6030-18 through 6030-25 will be used to document all the findings.

84.-89. **RESERVED**.

CHAPTER 9. INTEGRATED LOGISTIC SUPPORT

90. **MAINTENANCE CONCEPT.**

a. General. The Policy and Requirements Branch (ASM-240) is the primary interface point for establishing the maintenance requirements and system support. The RFI Elimination APME (ANC-700) will provide background data to the Associate Program Manager for Logistics (APML) who will provide the data to ASM-240 for the development of the Maintenance Requirements Document (MRD). The approved MRD will be the basis for the NAS Integrated Logistics Support Plan (ILSP) for the RFI elimination equipment. ANS-420 has the responsibility for ensuring that all logistics factors are considered. The MRD titled "Air/Ground Communications Equipment" was approved on May 19, 1992. Funding for maintenance will be provided by the program office for the first 2 years with the FAA Logistics Center providing funding for the remaining years.

b. Corrective Maintenance. The AF personnel will provide field level repair of RFI elimination equipment. The contractors will provide depot level maintenance support packages for the LPA's and receiver multicouplers only. Depot level maintenance will be provided by the contractor at a contractor facility.

(1) Field Level Maintenance. The FAA will provide field level corrective and preventive maintenance on all RFI elimination equipment. AF technicians will determine which LRU requires corrective maintenance, replace it with a spare LRU, and request a replacement unit from the FAALC. The FAALC will maintain a stock of depot spares and act as an exchange point for all defective RFI elimination equipment between the operational sites and the contractor. The FAALC will provide instructions for repair in accordance with (IAW) FAAD-STD-1323 or reclamation of the defective unit. Additionally, the AF personnel will perform preventive maintenance on all RFI elimination equipment.

(2) Depot Level Maintenance. The contractor will provide depot level corrective maintenance for the LPA and receiver multicouplers. This includes routine depot level repair within 30 days after receipt of an unserviceable item and emergency repair within 48 hours. The FAALC will provide instructions for the regions for the disposition of defective equipment between the operational site and the contractor's maintenance depot. The FAALC will monitor the contractor depot level maintenance.

(3) Contract Period. The period of performance for each contract is 5 years.

c. Preventive Maintenance. Preventive maintenance will be performed by AF personnel and occur at the operational facility in accordance with the FAA's preventive maintenance schedule.

The maintenance personnel will coordinate with the AF sector at least 72 hours in advance of planned preventive maintenance activities.

d. FAALC Requirements. The contractor will perform depot level maintenance during the life of the LPA and receiver multicoupler contracts. While the contractor is performing the maintenance, the Air/Ground Communications and Control Division (ANC-700) will provide funding for procurement of spare equipment, LRU's, and parts to be placed in the FAALC as a result of decisions made during the provisioning conference, and recommendations indicated on the provisioning parts list. The FAALC will operate in an exchange mode for RFI elimination equipment. The AF personnel will contact the FAALC when the need to obtain contractor depot level repairs occurs. The FAALC will direct the AF representative in the repair of the defective LRU's. The FAALC will send spare LRU's to the operational sites and coordinate all depot level repairs with the contractor. When adequate spares and trained technicians are available, the FAALC will make the decision to accept maintenance responsibilities or allow the contractor to continue maintenance activities.

e. Second Level Support

(1) Contractor. The LPA and receiver multicoupler equipment contractors may provide assistance to solve site-unique problems identified by the AF personnel through AOS-200 via a telephone advisory service or through technical assistance visits when required. When contractor technical assistance is provided to FAA technicians, the contractor will provide all required test equipment and diagnostics software.

(2) FAA. System wide RFI problems will be coordinated with ASM-500 for resolution by ASM-500 and AOS-200. RFI elimination equipment problems will be coordinated with AOS-200 which will have the capability to recommend modifying hardware, firmware, documentation, and handbooks. Support to AOS-200 may also be provided by the contractor via a telephone advisory service and technical assistance.

91. **TRAINING**.

a. General. The RFI elimination equipment offerors (LPA and multicoupler only) will each submit a COTS training package with their proposals. The FAA will evaluate the training package and determine whether to use the contractor training or order the contractor to develop course materials for the FAA to provide the training. The training program will be for FAA personnel engaged in management, operations, and hardware maintenance. In the event the offeror's proposed training does not meet the FAA requirements, the FAA may require the contractor to develop the training program in accordance with FAA-STD-028A.

b. Training Courses. The contractor may provide the following training courses for the LPA and receiver multicouplers:

(1) Correspondence Course. As determined by the Government, the contractor will provide training course materials for the operation/maintenance of RFI elimination equipment. Training will include maintenance to the LRU level.

(2) Hardware Maintenance Course. As determined by the Government, the contractor will provide hardware maintenance course materials.

(3) Depot Level Training and Materials. As determined by the Government, the contractor will provide depot level training and materials.

(4) Vendor Certification. The students who complete the operations/maintenance training courses will be certified as vendor qualified and will be able to:

(a) Perform equipment power-up, power-down, start-up, start-over, recovery and change of operational modes.

(b) Locate and identify all assemblies and sub-assemblies.

(c) Analyze and identify problems by interpreting results of functional and diagnostics tests.

(d) Use functional and flow diagrams and test equipment, as required, to locate malfunctions to the appropriate LRU.

(e) Perform periodic maintenance as required.

(f) Remove and replace faulty LRUs.

c. Attrition Training. The FAA Academy will provide attrition training using contractor provided documentation.

d. FAA Training Program. AHT-400 will initiate action to implement the FAA follow-on training program for RFI elimination equipment.

92. **SPECIAL TOOLS AND TEST EQUIPMENT**. Special tools, test/support equipment and/or interface devices required to support all the RFI Elimination equipment will be held to a minimum. The vendors will identify in their provisioning technical documentation for the receiver multicoupler and LPA procurements, all common tools, test/support equipment, interface devices, and connectors needed to maintain the equipment.

93. **SUPPLY SUPPORT**.

a. General. The equipment contractors will provide spares for initial provisioning, as ordered by the Government, after the provisioning conference. The type and quantity of spares ordered will be based on an analysis of the provisioning technical documentation provided by the contractor and verified in the data records. Common parts will be identified, but will be procured separately by the FAALC and provided to the appropriate storage locations in accordance with established FAA supply procedures. There will be two supply support levels as identified below:

(1) Operational Site/Work Center. Requirements for site spares of LRU's shall be determined by Systems Management Service (ASM).

(2) FAALC. The FAA Logistics Center will provide supply support.

94. **VENDOR DATA AND TECHNICAL MANUALS**. The contractors will be responsible for developing and providing the following:

a. Provisioning Technical Data. The contractors will establish and maintain a Logistics Support Analysis (LSA) program in accordance with MIL-STD-1388-1 and MIL-STD-1388-2. The LSA program will support the accomplishment of LSA program tasks. The data and information generated from the LSA will be recorded and stored in the contractor established and maintained automated LSA Record (LSAR) system. The contractor will plan for and provide the Logistics Support Analysis Report 061, Parts Master File. The contractor will conduct a Provisioning Conference to identify the recommended provisioning parts and quantities. The contractor will provide: (1) Provisioning Parts List, (2) failure data, (3) drawings, and (4) samples of equipment, assemblies, and replaceable parts.

b. Commercial Manuals. The vendors will provide commercially available manuals to be evaluated as part of their proposals.

c. Technical Instruction Books. The contractor may be required to provide technical instruction books in accordance with FAA-D-2494.

95. **EQUIPMENT REMOVAL**. The RFI elimination equipment may be required to replace some older items. Older model LPAs will be rendered inoperative. Any other equipment removed will be disposed of in accordance with Order 4800.2, Utilization and Disposal of Excess and Surplus Personal Property.

96. **FACILITIES**. The RFI elimination equipment will be configured to fit within existing space allocated at the FAA facilities. Specific space requirements for equipment have been

identified in Paragraph 32. No special responsibilities have been assigned to the Government for designing, developing, or acquiring support facilities.

97.-99. **RESERVED**.

CHAPTER 10. ADDITIONAL PROJECT IMPLEMENTATION ASPECTS

100. **CONFIGURATION MANAGEMENT**.

a. Acquisition Configuration Management. Offerors will prepare and submit a Configuration Management Plan with their proposal. The plan will describe the vendor's procedures baseline identification and control and procedures for the implementation and control of equipment upgrades. Of particular importance, modifications to the equipment must maintain form, fit and function of the equipment which they replace.

b. Implementation Configuration Control.

(1) AOS-200 will assume the responsibility for maintaining the operational configuration per Order 1100.57. Guidance and procedures in Order 1800.8 will be followed to ensure a smooth and efficient transfer between the Program Office and the National Airway Systems Engineering Division.

(2) ANC-700 and AOS-200 will develop a hand-off agreement concerning the configuration management transition. This agreement will be added in the future as an addendum to this Project Implementation Plan.

101.-109. **RESERVED**.

SECTION II

CHAPTER 1. GENERAL

This chapter is the same a Section I.

CHAPTER 2. PROJECT OVERVIEW

20. **SYNOPSIS**. RFI Elimination transmitter combiner equipment will be utilized to support the RFI Elimination Program requirements for various sites. The program will enhance operational capabilities on existing air/ground (A/G) equipment. The equipment procured will help reduce the effects of RFI in FAA A/G communications.

21. **PURPOSE**. The RFI Elimination Program procurements provide for transmitter combiners and ancillary devices to support, establish, relocate, and modernize CIP projects. The procurements will be for commercial off-the-shelf (COTS) equipment configured to fit into existing installations. The equipment will improve A/G communications through the reduction of RFI.

22. **HISTORY**. The RFI Elimination Program commenced in 1990. The objective of this program is to procure equipment that will reduce RFI and replace existing spectrally noisy communication equipment with solid state units having more stringent specifications for RFI reduction.

23. **ACQUISITION STRATEGY**. Key aspects in the acquisition of the RFI Elimination equipment are as follows:

a. The FAA plans to utilize an Indefinite Delivery Indefinite Quantity (IDIQ) Firm-Fixed Price (FFP) contract to procure transmitter combiners. In order to provide flexibility in meeting new CIP requirements through the 1990's, the contracts for the equipment will be issued for five (5) years.

b. The RFI Elimination transmitter combiner equipment procurement consists of COTS equipment which will be functionally compatible with the equipment presently installed.

c. The equipment and services to be obtained will be ordered as needed and include:

(1) VHF and UHF transmitter combiners.

(2) Training for FAALC personnel in the tuning of the combiners.

24.-29. **RESERVED**.

CHAPTER 3. PROJECT DESCRIPTION

30. **FUNCTIONAL DESCRIPTION**. The transmitter combiners will be used to reduce RFI resulting from multiple collocated antennas. The transmitter combiner equipment will be state-of-the-art radio communication devices with more stringent requirements that will reduce spurious emissions. The equipment will operate in one of two frequency ranges, either 118-137 MHz Very High Frequency (VHF) or 225-400 MHz Ultra High Frequency (UHF).

31. **PHYSICAL DESCRIPTION**.

a. RFI Elimination Equipment. The purchase description of the equipment will be updated and furnished after contract award.

b. Equipment Racks. Transmitter combiners may have their own racks.

32. **SYSTEM REQUIREMENTS**. The system requirements are described in paragraphs a - c.

a. Electrical Power. The transmitter combiners require no electrical power.

b. Space. The space requirements for the RFI elimination transmitter combiner equipment are dependent upon the limits established in the purchase descriptions and the actual equipment dimensions. Estimated dimensions for the transmitter combiner are that the racks are no greater than 44 inches in height, 30 inches in width, and 30 inches in depth. The capability exists for stacking two combiner racks, changing the maximum height of the equipment to 84 inches if the original racks are used.

c. Environmental.

(1) Ambient Temperature Operation. The transmitter combiner equipment will operate in an ambient temperature range of between -10° C (Celsius) and +55° C.

(2) Relative Humidity Operation. The transmitter combiners shall operate with a humidity between 5 and 90 percent in accordance with FAA specifications.

33. **INTERFACES**.

a. Interface impedance. Equipment will be compatible with transmitters, LPA's, and antennas.

b. NAS-IR-81004304 (Interface Requirements Document ARTCC/ACF/DMN) is the only applicable interface document.

34.-39. **RESERVED**.

CHAPTER 4. PROJECT SCHEDULE AND STATUS

40. **PROJECT SCHEDULES AND GENERAL STATUS**. The project schedule for the procurement process has been established.

41. **MILESTONE SCHEDULE SUMMARY**. The milestones for the project are presented below.

MILESTONE	DATES COMBINER
Procurement Request to ASU	03/01/93
Solicitation Issued	12/13/93
Proposals Received	02/16/94
Technical Proposal Eval Comp.	03/28/94
Cost Proposal Eval Comp.	03/28/94
Best and Final Offers Received	04/28/94
Operational Capabilities Demonstration (OCD) Completed	05/28/94
Contract Award	06/19/94
OT&E Testing Completed	09/11/94
Deployment Readiness Review (EXCOM)	02/10/95

42. **INTERDEPENDENCIES AND SEQUENCE**. As this project is primarily a replacement of existing equipment, there are no interdependencies with other contracts or events.

43.-49. **RESERVED**.

CHAPTER 5. PROJECT MANAGEMENT

This chapter is the same as Section I with the exception of the following subparagraphs.

53. **PROJECT RESPONSIBILITY MATRIX**. Figure 5-2, Project Responsibility Matrix, shows the organizational responsibilies and significant actions to be performed during the transmitter combiner procurement implementation.

FIGURE 5-2
PROJECT RESPONSIBILITY MATRIX

Activity	Action	ANC-700	AOS-200 *	ASM-500	ACW-300	ANS-420	AML-1	AMA-900	RAPM	Contractor.
Equipment	Provide Receive Install						X		X X	X
Integration Testing	Plan Conduct	X		X	X X					
Shakedown Testing	Plan Conduct	X	X X	X						
Maintenance	Site								X	
Facility/System Acceptance	Plan Conduct			X X					X X	

ANC-700 = Air/Ground Communications and Control
AOS-200 = National Airway Systems Engineering Division, Operational Support Service
ASM-500 = Spectrum Engineering and Policy Division
ACW-300 = Engineering, Integration and Operational Evaluation Service
ANS-420 = NAS Transition and Implementation Service
AML-1 = FAA Logistics Center
AMA-900 = FAA Academy
RAPM = Regional Associate Program Manager
CONTRACTOR = Contract award winner

* See Section I Paragraph 52

56. **PLANS AND REPORTS**. The following documents are required during the acquisition, testing, and implementation of the transmitter combiner equipment.

a. Documentation Delivered With Offeror's Proposal. The individual offerors will submit the following documents with their proposal as they apply:

(1) Program Management Plan.

(2) Contractor's Test Documentation.

(3) Commercial manuals.

b. Contractor Documentation Delivered After Contract Award. The RFI elimination equipment contractors may be required to submit the following Contract Data Requirements List items in accordance with the final negotiated schedule and distribution:

(1) Agendas.

(2) Minutes.

(3) Technical Instruction Books

57. **APPLICABLE DOCUMENTS**. The following additional document to Section I paragraph 57 has been referenced and the current version of this document is applicable to the implementation of the RFI Elimination Program. FAA-PD-130-MC, FAA-PD-130-PA, MIL-STD-1388-1, and MIL-STD-1388-2 do not apply to the transmitter combiner.

DOCUMENT	TITLE
FAA-PD-130-TC	Purchase Description, VHF/UHF Air/Ground Transmitter Combiner

58.-59. **RESERVED**.

CHAPTER 6. PROJECT FUNDING

60. **PROJECT FUNDING STATUS, GENERAL.** The chart below illustrates the current CIP funding for RFI elimination, as approved by the House subcommittee. This includes limited funding for installation. The RFI totals reflect an independent Government cost estimate of the requirements.

($ Million)	PRIOR	92	93	94	95	96	97	98	TOTAL
House Subcomm.	$9.6	3.0	0.0	2.0	0.0	0.0	0.0	0.0	14.6
RFI Totals	$9.6	3.0	0.0	2.0	0.0	12.1	9.0	9.0	44.7

61.-69. **RESERVED.**

CHAPTER 7. DEPLOYMENT

70. **GENERAL DEPLOYMENT ASPECTS**. This Section is the same as Section I with the exception of the DRR schedule:

DRR ACTIVITY	DATE TRANSMITTER COMBINER
DRR Kickoff Meeting	06/16/93
Initial Checklist Review	06/16/93
DRR Team Meeting	11/17/93
Baseline Checklist	12/15/93
Perform Team Review	03/15/94
Director Review	07/15/94
OT&E Testing Complete	08/11/94
Close out Deployment Critical Issues	11/24/94
Distribute Draft DRR Report	12/24/94
DRR Briefing to AAF-1	01/25/95
DRR Report Approved	02/01/95
Deployment Determination	02/10/95

71. **SITE PREPARATION**. The site preparation will be the responsibility of the regional Airway Facilities division coordinated through the RAPM. Limited funding may be available from Facilities and Engineering (F&E) sources. There is no plan to purchase additional real estate to incorporate RFI elimination transmitter combiner equipment.

72. **DELIVERY**. The RFI elimination transmitter combiner equipment will be delivered in response to separate delivery orders issued by the FAA contracting officer. These orders will be issued for equipment to fill requirements assigned by ANC-300. The RFI elimination equipment vendors are required to deliver equipment within 60 days of receipt of delivery order. Site installation is not part of the contract. Airway Facilities F&E or Technical Services Support Contractor (TSSC) personnel will provide all site installation.

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80. **REQUIREMENTS VERIFICATION**. The RFI elimination transmitter combiner equipment vendors are required to meet the requirements of the contract by submittal of their test documentation. The vendor will submit a matrix illustrating cross matching of information between their proposed equipment and the requirements of the contract. An Operational Capabilities Demonstration is also planned prior to contract award to assure the requirements are met.

81. **OPERATIONAL TEST AND EVALUATION**. All representative RFI elimination equipment must pass OT&E testing prior to the first years delivery of equipment.

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b. FAA OT&E SHAKEDOWN TESTING. FAA OT&E Shakedown Testing will take place at the first operational site.

82. **CONTRACTOR ACCEPTANCE INSPECTION**. A Contractor Acceptance Inspection (CAI) will be performed by the Quality Reliability Officer (QRO) at the contractor's facility on the equipment to be delivered under each contract.

83. **ACCEPTANCE INSPECTION**. An acceptance inspection will be performed by the regional AF and spectrum engineering representatives for all new installations. The inspection will determine that the installation at the site is completed in accordance with standards and specifications. FAA Forms 6030-18 through 6030-25 will be used to document all the findings.

84.-89. **RESERVED**.

CHAPTER 9. INTEGRATED LOGISTIC SUPPORT

90. **MAINTENANCE CONCEPT.**

a. General. The Policy and Requirements Branch (ASM-240) is the primary interface point for establishing the maintenance requirements and system support. The RFI elimination APME (ANC-700) will provide background data to the Associate Program Manager for Logistics (APML) who will provide the data to ASM-240 for the development of the Maintenance Requirements Document (MRD). The approved MRD will be the basis for the NAS Integrated Logistics Support Plan (ILSP) for the RFI elimination equipment. ANS-420 has the responsibility for ensuring that all logistics factors are considered. The MRD titled "Air/Ground Communications Equipment" was approved on May 19, 1992.

b. Corrective Maintenance. The AF personnel will provide field level maintenance. There is no depot level maintenance support for the transmitter combiners.

(1) Field Level Maintenance. The FAA will provide field level corrective and preventive maintenance on all RFI elimination transmitter combiner equipment.

(2) Depot Level Maintenance. There will be no depot level maintenance on the transmitter combiners.

(3) Contract Period. The period of performance for the contract is 5 years.

c. Preventive Maintenance. Preventive maintenance will be performed by AF personnel and occur at the operational facility in accordance with the FAA's preventive maintenance schedule. The maintenance personnel will coordinate with the AF sector at least 72 hours in advance of planned preventive maintenance activities.

d. FAALC Requirements. The FAALC will store a limited number of spare transmitter combiners for regional use in the event of catastrophic failure.

e. Second Level Support

(1) Contractor. There is no contractor second level assistance available for the transmitter combiners.

(2) FAA. System wide RFI problems will be coordinated with ASM-500 for resolution by ASM-500 and AOS-200. RFI elimination equipment problems will be coordinated with AOS-200 which will have the capability to recommend modifying hardware, firmware, documentation, and handbooks.

91. **TRAINING**. The transmitter combiner will provide training in the tuning of the transmitter combiner for FAALC personnel only.

92. **SPECIAL TOOLS AND TEST EQUIPMENT**. Special tools, test/ support equipment and/or interface devices required to support all the RFI elimination transmitter combiner equipment will be held to a minimum.

93. **SUPPLY SUPPORT**. The equipment contractors will provide life cycle spares, as ordered by the Government.

94. **VENDOR DATA AND TECHNICAL MANUALS**. The contractors will be responsible for developing and providing the following:

a. Commercial Manuals. The vendors will provide commercially available manuals to be evaluated as part of their proposals.

b. Technical Instruction Books. The contractor may be required to provide technical instruction books in accordance with FAA-D-2494.

95. **EQUIPMENT REMOVAL**. Any equipment removed will be disposed of in accordance with Order 4800.2, Utilization and Disposal of Excess and Surplus Personal Property.

96. **FACILITIES**. The RFI elimination transmitter combiner equipment will be configured to fit within existing space allocated at the FAA facilities. Specific space requirements for equipment have been identified in Paragraph 32. No special responsibilities have been assigned to the Government for designing, developing, or acquiring support facilities.

97.-99. **RESERVED**.

CHAPTER 10. ADDITIONAL PROJECT IMPLEMENTATION ASPECTS

100. **CONFIGURATION MANAGEMENT**.

a. Acquisition Configuration Management. The contractor will be required to operate under a configuration management program.

b. Implementation Configuration Control.

(1) AOS-200 will assume the responsibility for maintaining the operational configuration per Order 1100.57. Guidance and procedures in Order 1800.8 will be followed to ensure a smooth and efficient transfer between the Program Office and the National Airway Systems Engineering Division.

(2) ANC-700 and AOS-200 will develop a hand-off agreement concerning the configuration management transition. This agreement will be added in the future as an addendum to this Project Implementation Plan.

101.-109. **RESERVED**.